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under the title "Crataegus in Pennsylvania II" records 110 species of this genus from Pennsylvania, 79 of which are indicated as new.—R. SCHLECHTER (Rep. Nov. Sp. **8**:561–572. 1910) under the title "Orchidaceae novae et criticae" has published 19 new species of orchids, several being from America; one new genus (*Platystele*) is proposed, which is based on PITTIER'S no. 2013 from Costa Rica.—J. K. SMALL (Torreya **10**:230, 231. 1910) has described a new species of *Anychiastrum* (*A. montanum*) from the mountains of southern Pennsylvania to Georgia.—I. URBAN (Symb. Ant. **4**:353–528. 1910) continues the "Flora portoricensis." The present fascicle contains the genera from *Euphorbia* to *Verbena* and includes a new species of *Heliotropium* (*H. antillanum*) from Porto Rico and Cuba, and a new variety of *Jussiaea suffruticosa* L.—W. WEINGART (Monats. für Kakteenkunde **20**:161, 162. 1910) has published a new species of *Cereus* (*C. cinnabarinus* Eichlam) from Guatemala.—R. S. WILLIAMS (Bull. N.Y. Bot. Gard. **6**:227–261. 1910) in a second contribution on Bolivian mosses records approximately 200 species and varieties, and of these 19 are described as new.—H. L. WILSON (Univ. Calif. Pub. Bot. **4**:75–84. *pls. 12, 13.* 1910) in conjunction with W. A. SETCHELL has published a new genus (*Gracilariophila*) parasitic on *Gracilaria confervoides*. The host and parasite have the same subordinal relationship.—H. WINKLER (Bot. Jahrb. **44**:497–571. 1910) has published the first of a series of articles entitled "Beiträge zur Kenntniss der Flora und Pflanzengeographie von Borneo." The paper is based mainly on collections made by WINKLER in 1908, and in the work of identification the author has been assisted by eminent specialists. About 45 new species are here described for the first time, and one new genus (*Campanocalyx*) of the Rubiaceae is included.—H. WOLFF (Rep. Nov. Sp. **8**:524–526. 1910) under the title "Umbelliferae novae I" has described new species from Mexico and China.—Different authors (Kew Bull. 328–344, 368–371, 381–386. 1910) have published new species of flowering plants, chiefly from Africa but including several from Peru. One new African genus (*Necepsia*), belonging to the tribe *Crotoneae* of the Euphorbiaceae, is proposed by D. PRAIN.—J. M. GREENMAN.

Algal coals.—The characteristic petroleum-yielding coals known as boghead, cannel, etc., have been referred to an algal origin by RENAULT, BERTRAND, and POTONIÉ, a view that has been more or less acceptable to our own students of paleozoic coals. The evidence of such an origin is the occurrence in such coals, as well as in bituminous schists and oil-shales, of abundant "spherical or oval bodies, often arranged in layers," these bodies being interpreted as colonial algae. They have now been investigated by JEFFREY,[8] who developed a special technique to secure numerous and even serial thin sections. As a consequence, the structure and hence the nature of these bodies have been brought out with a clearness not heretofore possible.

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[8] JEFFREY, E. C., The nature of some supposed algal coals. Proc. Amer. Acad. **46**:273–290. *pls. 5.* 1910.

They are certainly not algae, but spores of pteridophytes, a group which constituted an important part of the paleozoic vascular flora, and which has always been regarded as responsible, to a large extent at least, for the ordinary coals. This conclusion sets aside the algal hypothesis of the origin of petroleum and other substances, and refers such products to the waxy and resinous spores of pteridophytes, "laid down on the bottoms of the shallow lakes of the Coal Period. These lacustrine layers, either as cannels, bog-heads, or bituminous shales, according to the sporal composition and the admixture of earthy matter, are the mother substance of petroleum. Pressure and temperature, either separately or combined, in the presence of permeable strata, have brought about the distillation of petroleum from such deposits."—J. M. C.

Alkaloids and algae.—COMERE[9] finds that some alkaloids can be used by algae as the only source of nitrogen. The algae used were *Ulothrix subtilis* and *Spirogyra crassa*, and the alkaloids were morphine hydrogen chloride, atropine sulphate, cocaine hydrogen chloride, quinine hydrogen chloride, and strychnine sulphate. The alkaloids were added gradually as assimilated, so that the plants were never subjected to strong solutions. *Ulothrix* proved to be far more amenable to cultural conditions than *Spirogyra*. It can readily assimilate morphine and atropine, and less readily cocaine; *Spirogyra* showed less marked assimilation of these compounds. Quinine could not be assimilated by either, and strychnine was very toxic to both, even in great dilution. Some of the alkaloids, therefore, are not aplastic.—WILLIAM CROCKER.

Response to light.—DANGEARD[10] finds that in three species of *Chromatium* studied (*C. Okenii*, *C. vinosum*, *C.* sp. ?) there is a marked accumulation in the longer rays of the spectrum as observed by ENGELMANN. In the infra-red there are two regions of accumulation; one in ray lengths 0.840–0.820 μ, and the second at 0.800–0.790 μ. In the visible spectrum there is a zone of accumulation between the *B* and *C* lines, and a second one extending to each side of the *D* line. A green bacterium that he recently described also responds to longer rays; it accumulates in a zone with ray lengths 0.770–0.670 μ. Some other experiments, claimed to show the relatively great effectiveness of long rays in assimilation and growth, add nothing of value to our knowledge. —WILLIAM CROCKER.

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[9] COMÈRE, JOSEPH, Du rôle des alcaloides dans la nutrition des algues. Bull. Soc. Bot. France **57**:277–280. 1910.

[10] DANGEARD, P. A., Phototactisme, assimilation, phénomènes de croissance. Bull. Soc. Bot. France **57**:315–319. 1910.